

Frontiers in Bioorganic Chemistry and Molecular Biology

Edited by Yu. A. Ovchinnikov and M. N. Kolosov
Elsevier/North-Holland; Amsterdam, New York, 1979
xii + 232 pages. \$58.55, Dfl 120.00

This is a difficult book to review as the range of subject interest is very wide indeed. The volume is a memorial tribute to Professor M. M. Shemyakin and consists of a series of reviews of those areas which were of interest to Shemyakin. Pauling writes on the nature of chemical bonds in bioorganic complexes of the transition metals; Barton discusses the intellectual background to the development of new organic reactions with particular emphasis on photolysis; Woodward examines the stereochemical problems involved in the synthesis of the macrolide antibiotic erythromycin; Witkop and his colleagues describe the synthesis of pyrimidine nucleoside analogues as possible antiviral drugs and there is a related contribution from Lederer and Robert-Géro on the synthesis of analogues of *S*-adenosylhomocysteine which show antiviral activity and inhibit cell transformation by oncogenic viruses. Wieland and Faulstick review their work on the localized liver toxicity of phalloidin and its unique reaction with actin and Prelog discusses the

structure of the lipophilic antibiotic boromycin. The problems of selective transport across membranes is reviewed by Ovchinnikov with particular emphasis on recent work with simple ionophores; Braunstein and his colleagues review their own work on the catalytic mechanisms of pyridoxal phosphate dependent lyases and Khorana reviews his own classical synthesis of a biologically active gene.

As is evident from the above list, every article is by a world authority and while the thread linking the varied contributions is tenuous, each is clearly written and interesting, as is usual when the real expert concentrates on his own speciality. The text is clearly printed and typographical errors are trivial; unfortunately however the price (\$58.55) will put this book beyond the means of most scientists, particularly since few will wish to read more than a fraction of the selected articles.

T. S. Work

The Origin of Life. A Warm Little Pond

by Clair Edwin Folsome
W. H. Freeman; San Francisco, 1979
xii + 168 pages. \$12.00 (hardcover), \$6.10 (softcover)

Written at the level and in the style of Scientific American articles, this small book covers cosmic evolution, from the formation of stars to the origin of the genetic code. There is an effort to present new or unorthodox views at several places. Thus, the primitive atmosphere (chapter 4) is assumed to contain little methane and much carbon dioxide. Monomers, polymers and proto-cells were formed, according to chapter 7, nearly concomitantly thanks to electrical

discharges and ultraviolet radiation acting directly onto the water surfaces. On chirality, Folsome holds the extreme view that 'the physical properties of some enantiomers vary widely. Solubilities, melting points, and other properties are significantly different' (chapter 12). Primitive transfer RNA molecules are viewed as the various linear replicas that can be made of one mini-circular RNA (chapter 10). The background knowledge given in the book is too elementary to